PSD-3-148

A.O. SMITH
WATER PRODUCTS COMPANY

GAS

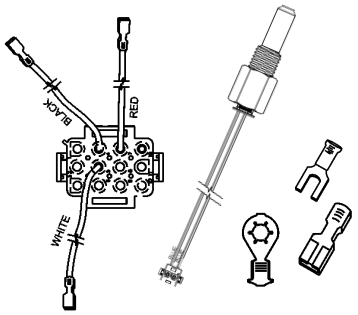
COMMERCIAL POWER BURNER BOILER

REPLACEMENT PARTS LIST

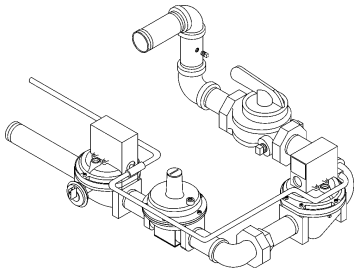
COPPER BOILERS FOR HYDRONIC HEATING & HOT WATER SUPPLY

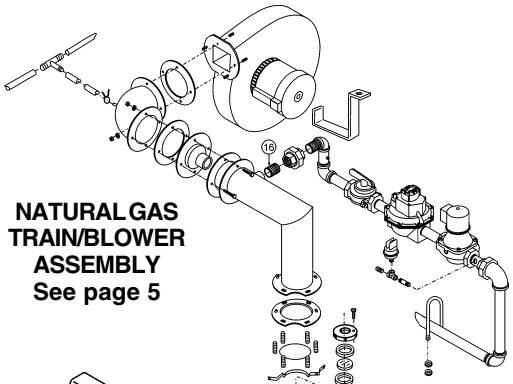
LEGEND MODELS LW/LB: 1000
SERIES 980, 981

WIRING/HARNESS & PROBES
See page 8

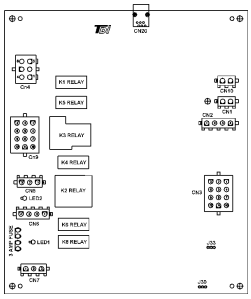


PROPANE GAS TRAIN ASSEMBLY
See page 6



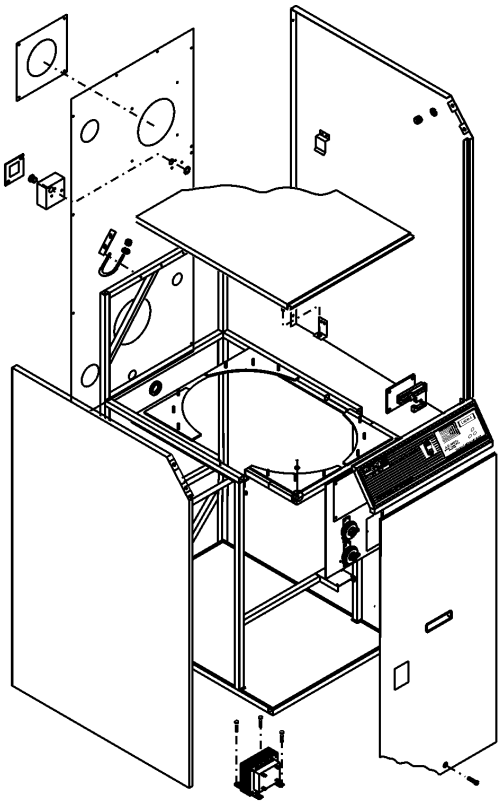


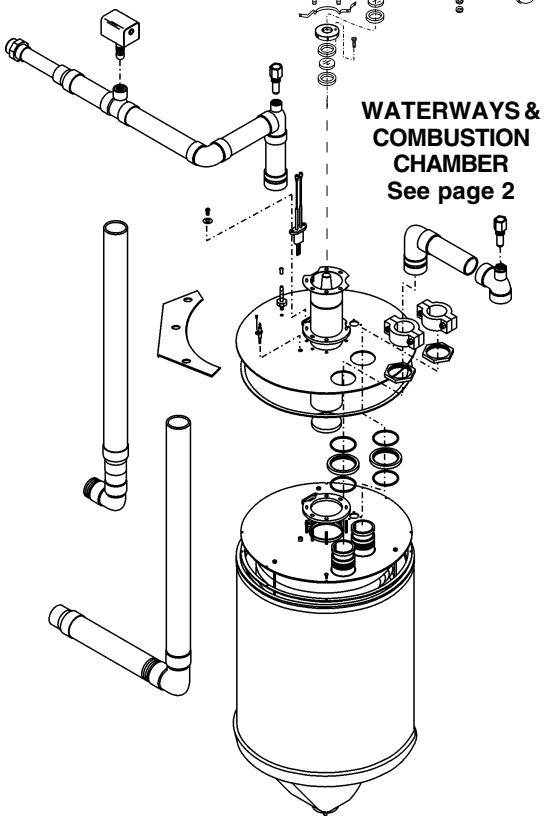
NATURAL GAS TRAIN/BLOWER ASSEMBLY
See page 5



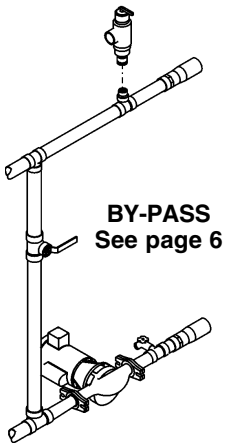
CONTROL BOARD
See page 7

JACKET/FRAME ASSEMBLY
See page 4

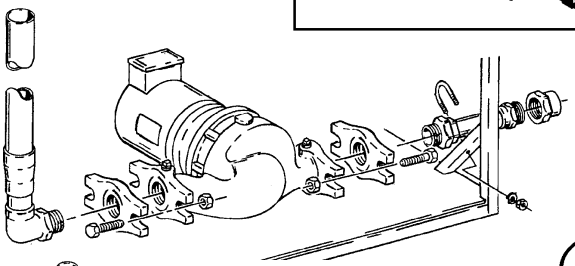


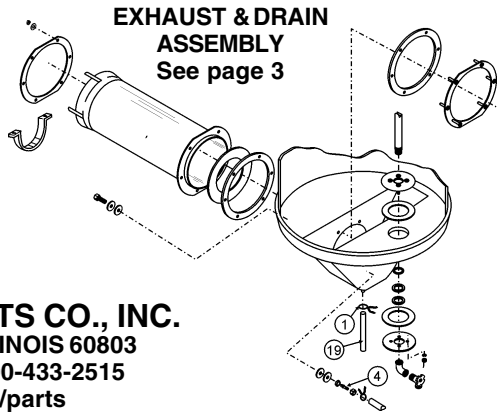


WATERWAYS & COMBUSTION CHAMBER
See page 2

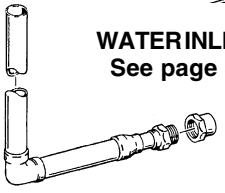


BY-PASS
See page 6





EXHAUST & DRAIN ASSEMBLY
See page 3



WATER INLET
See page 3

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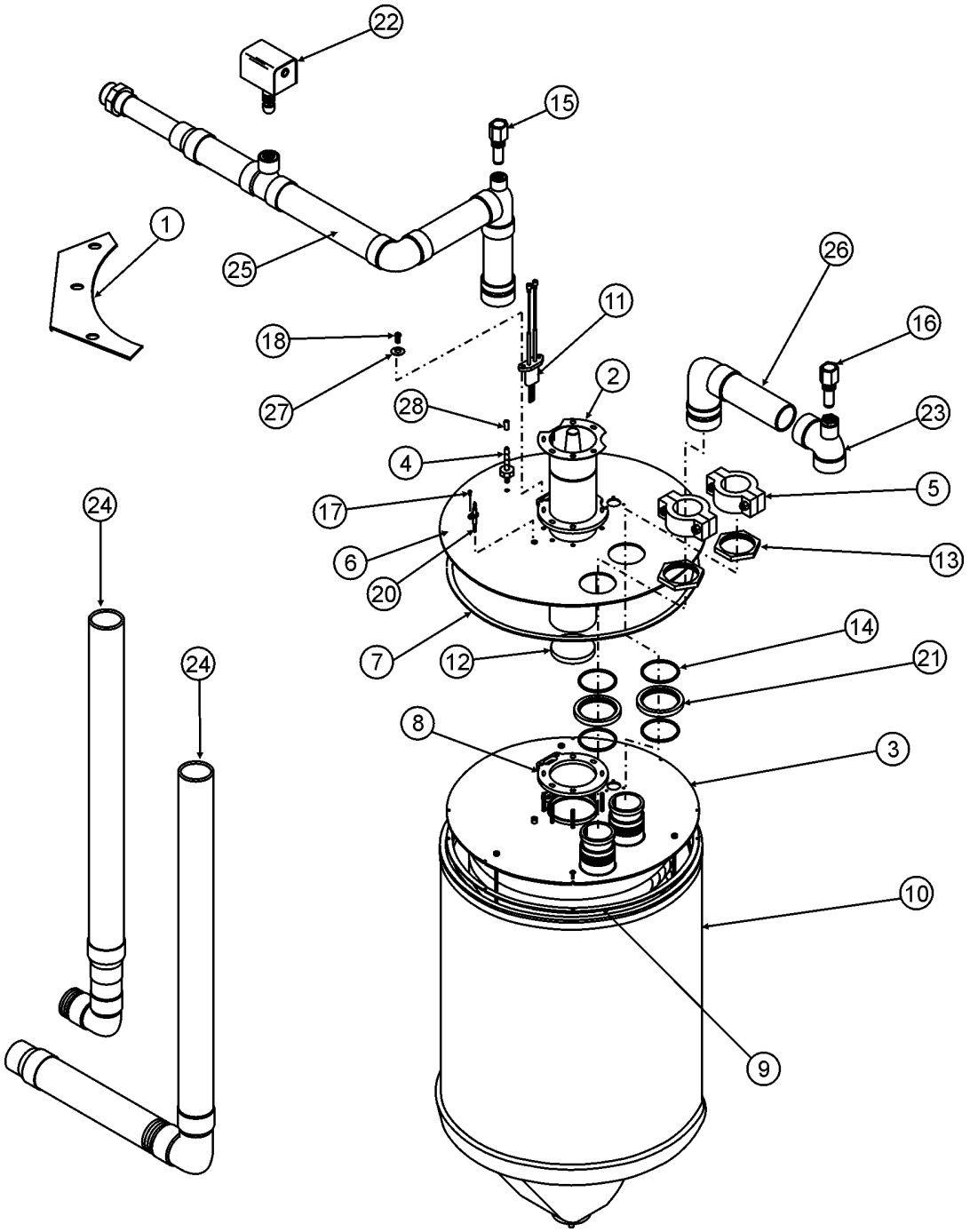
LB/LW 1000 WATERWAYS & COMBUSTION CHAMBER PARTS LIST

Item	Description	Part Number
1	Bracket	191602
2	Burner and Cone Assembly	191850-2
3	Combustion Chamber Asembly	192129-1
4	Connector, Hose	191765
5	Coupling, Flexible w/Gasket	191780-1
6	Cover Outer	210404
7	Gasket, Outer	191563-1
8	Gasket, Burner	191564-1
9	Gasket, Inner	191563
10	Housing Assembly	191627-4
11	Ignitor	192334
12	Insulation, Burner	191618
13	Nut, Manifold	191555-1
14	O-Ring	191556-2
15	Probe, Outlet Temp./ECO	210572
16	Probe, Inlet Temp	210571
17	Screw, Machine #8-32/ 3/8" Long, SST	210444
18	Screw, Machine #8-32/ 1" Long, SST	191770
19	Sealer, Silicone (not shown)	191482-1
20	Sensor, Flame	210421
21	Spacer Ring	191554-1
22	Switch, Safety Flow	210176
23	Tee Assembly	192387
24	Tube Assembly, Primary (LW Models)	192388
24	Tube Assembly, Primary (LB Models)	192225
25	Tube Assembly, Outlet	210426
26	Tube Assembly, Secondary	192386
27	Washer, Flat #8 SST	191768
28	Restrictor-Air, Top Cover	191926-1



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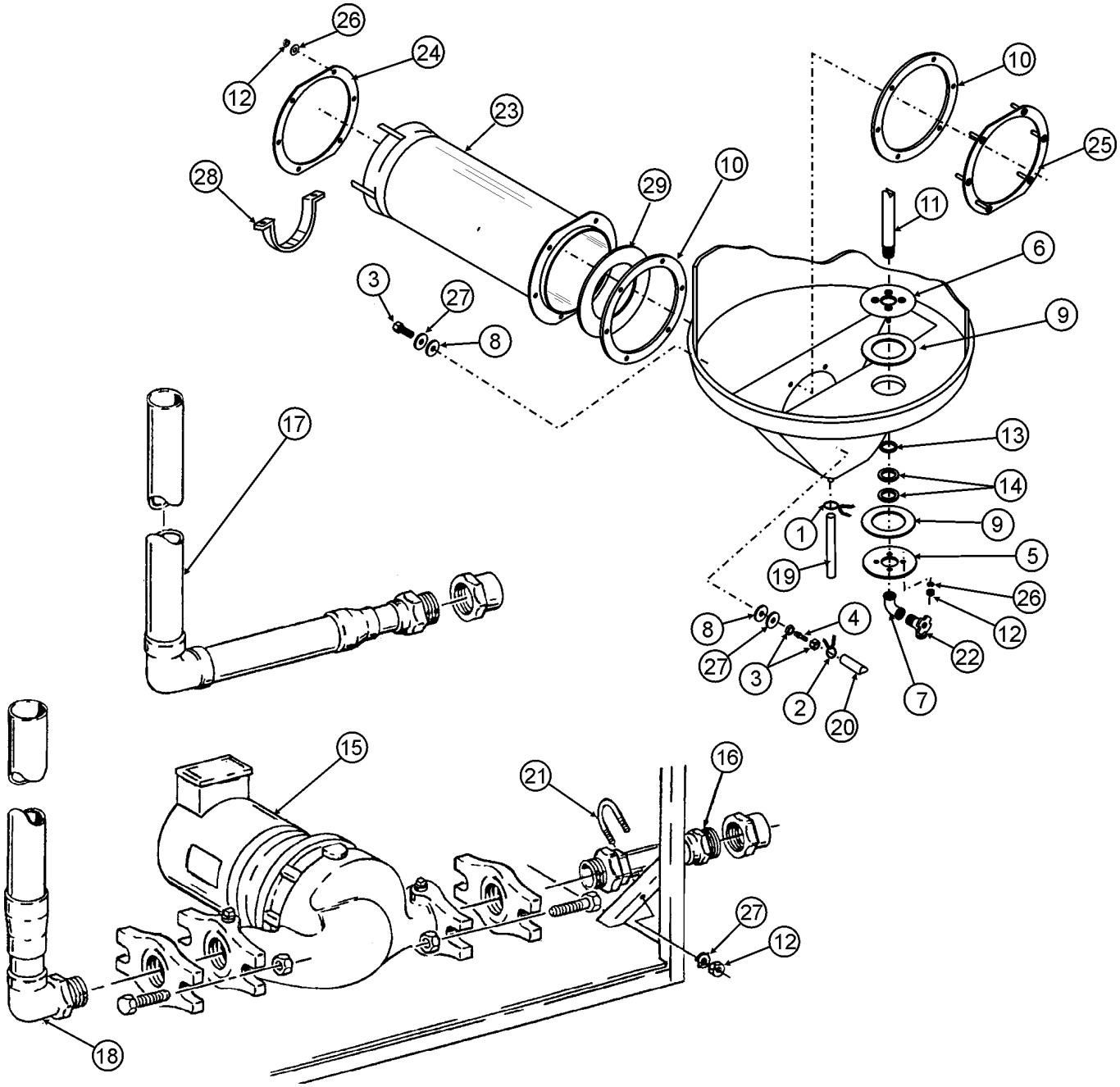
LB/LW 1000 EXHAUST, DRAIN & WATER INLET ASSEMBLY PARTS LIST

Item	Description	Part Number
1	Clamp, Hose (Large)	191794-1
2	Clamp, Hose (Small)	191794-3
3	Connector, Female Bulkhead	191744
4	Connector, Port	191745
5	Drain, Flange	191620
6	Drain, Flange Assembly	191625
7	Elbow	191664
8	Gasket, Blocked Flue	191767
9	Gasket, Drain	191622
10	Gasket, Vent	191683-1
11	Nipple	20373-18
12	Nut, Hex 1/4"	191769
13	O-Ring	191556-1
14	Plate, Drain Seal	191626
15	Pump Ass'y, Circulator (LW Models)	192203
16	Tube Assembly, Inlet (LW Models)	192308
17	Tube Assembly, Primary (LB Models)	192225
18	Tube Assembly, Primary (LW Models)	192388
19	Tubing, Condensate	191746
20	Tubing, Pressure	191562
21	U-Bolt Assembly	191938
22	Valve Drain	26273
23	Vent Assembly	210494
24	Vent Flange	191685-5
25	Vent Flange Assembly	191686-1
26	Washer, Lock 1/4" Stainless	191771
27	Washer, Flat	191766
28	Vent Support, Bracket	192194
29	Vent, Restricting Ring (Series 981, LP)	191923-1



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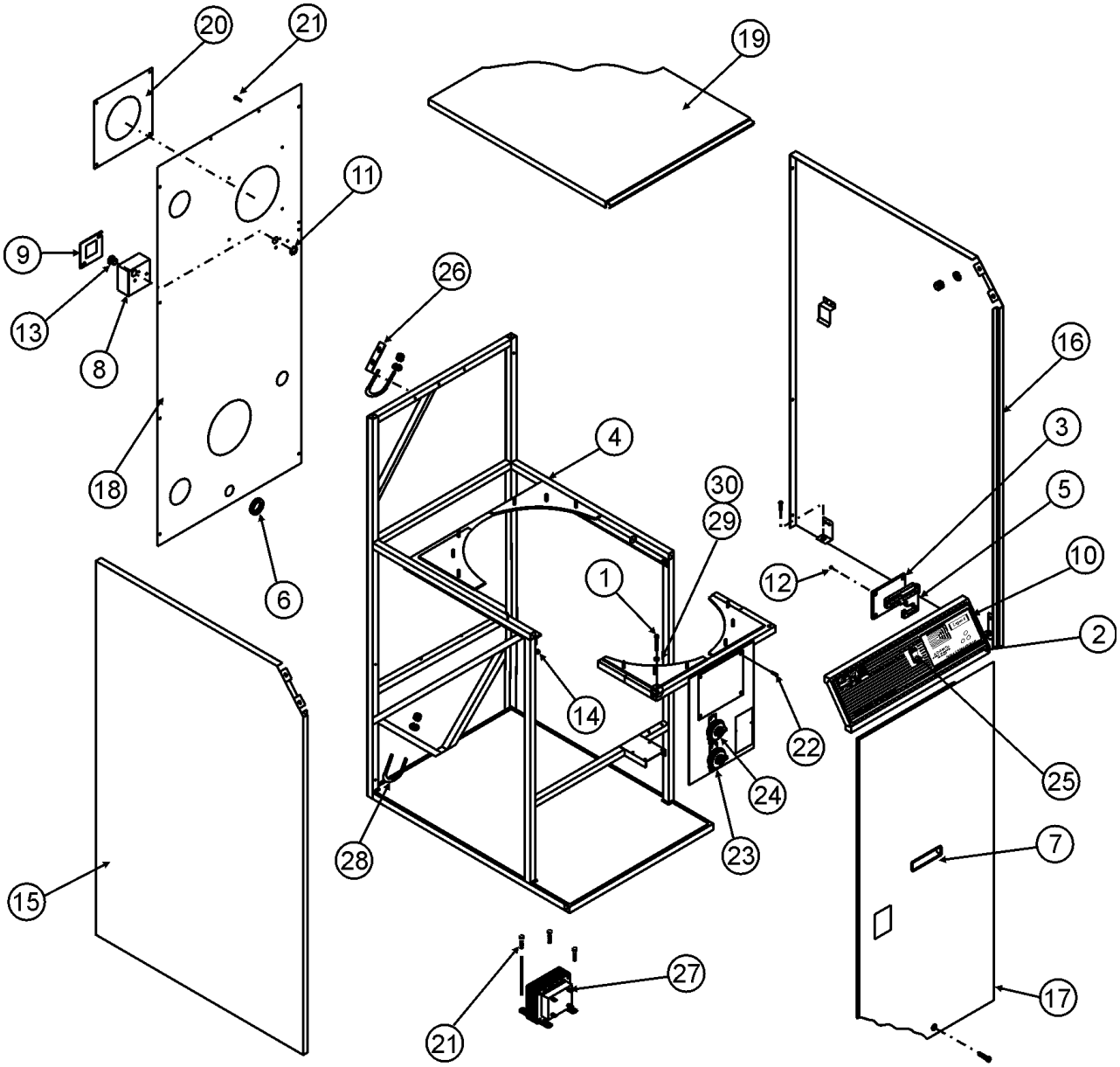
LB/LW 1000 JACKET/FRAME ASSEMBLY

Item	Description	Part No.
1	Bolt Machine 5/16" - 18"	191358-2
2	Control Panel Assembly	210601
3	Display Board	210219
4	Frame Assembly	210501
5	Gasket, Display	210130
6	Grommet	97951
7	Handle	191802
8	Junction Box Assembly	190438-1
9	Junction Box Cover	2233
10	Label, Control Panel	210561-1
11	Locknut, Star	1953
12	Locknut #6 -32	210207
13	Nipple, Chase	41994
14	Nut, Lock Hex 5/16" - 18"	97896
15	Panel Assembly, Left Side	191796-3
16	Panel Assembly, Right Side	191796-2
17	Panel, Lower Front	191805-1
18	Panel, Rear (Natural)	192191
	Panel, Rear (Propane)	210020
19	Panel, Top Cover	191609-1
20	Plate, Rear Cover	210214
21	Screw, Hex Head 5/16"	210125
22	Screw, Hex Head #6 -32	210206
23	Switch, Blower Prover	191666
24	Switch, Blocked Flue	191667
25	Switch , Rocker	191665-1
26	Support Bracket (Propane Only)	210017
27	Transformer (100VA)	210449
28	U - Bolt Assembly (Waterway)	191938
29	Washer, Flat	191359
30	Washer, Lock	191480
31	Switch, Relay	211546



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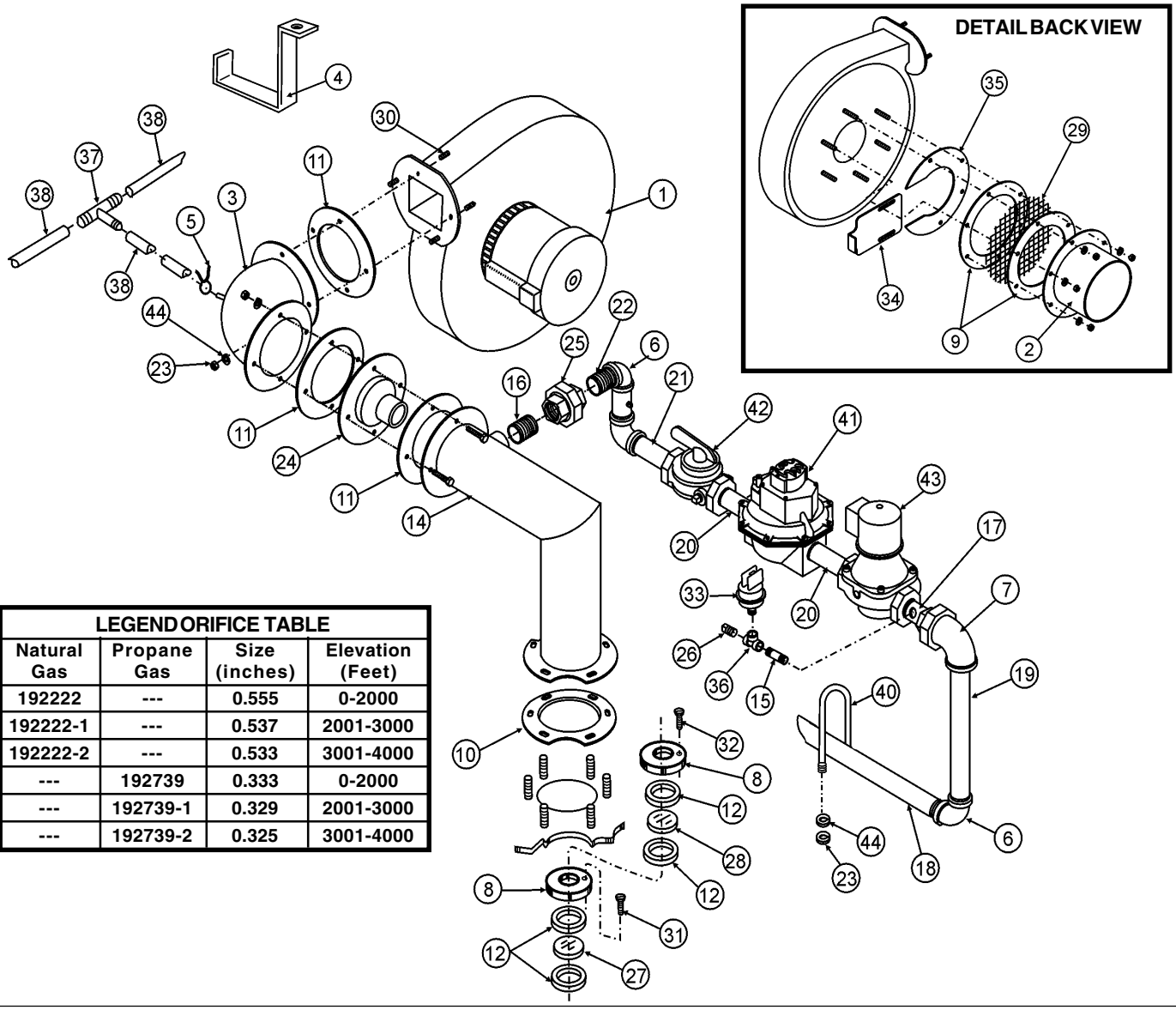
LB/LW 1000 NATURAL GAS TRAIN/BLOWER ASSEMBLY

Item	Description	Part No.
1	Blower	192195
2	Blower Adapter Assembly	192215-1
3	Blower Manifold Assembly	192217
4	Bracket, Blower	210214
5	Clamp, Hose	191794-3
6	Elbow, 1-1/4"	192216
7	Elbow, Union 1-1/4"	86506-1
8	Flange, Observation Port	191573
9	Gasket, Blower Air Inlet	192213
10	Gasket, Burner	191564
11	Gasket, Manifold	191565
12	Gasket, Port (1/8" Thick)	191576
14	Manifold Assembly - Air/Gas	192309
15	Nipple, Close 1/8"	191147-3
16	Nipple, Close Stainless	191772-1
17	Nipple, Tapped	86505-3
18	Nipple, 1-1/4" x 38 1/2"	86505-28
19	Nipple, 1-1/4" x 28 3/4"	86505-27
20	Nipple, 1-1/4" x 2"	86505
21	Nipple, 1-1/4" x 3"	86505-2
22	Nipple, 1-1/4" x 4"	86505-6
23	Nut, Hex 1/4"	170272
24	Orifice, Air (Series 980 - Nat. Gas)	192737-3
	Orifice, Air (Series 981 - L.P. Gas)	192737-2
25	Orifice, Union	See Orifice Table Below
26	Plug, 1/8" Pipe	3348
27	Port, Observation Lower	191572
28	Port, Observation Upper	191572-1
29	Screen, Air Inlet	192220-1
30	Screw, Cap 1/4"	190960-2
31	Screw, Flathead #8-32 x 1/2"	191542
32	Screw, Flathead #8-32 x 3/4"	191542-1
33	Switch, Low Gas Pressure	191149-1
34	Shutter, Blower	192593
35	Shutter Flange	192592
36	Tee, 1/8"	40119
37	Tee, Pressure	191633
38	Tubing, Pressure	191562
40	U-Bolt Assembly (Gas Train)	191938-3
41	Valve, Main Gas	78481-3
42	Valve, Firing	3423-3
43	Valve, Solenoid Gas	192189
44	Washer, Lock 1/4"	1006



LEGEND ORIFICE TABLE			
Natural Gas	Propane Gas	Size (inches)	Elevation (Feet)
192222	---	0.555	0-2000
192222-1	---	0.537	2001-3000
192222-2	---	0.533	3001-4000
---	192739	0.333	0-2000
---	192739-1	0.329	2001-3000
---	192739-2	0.325	3001-4000

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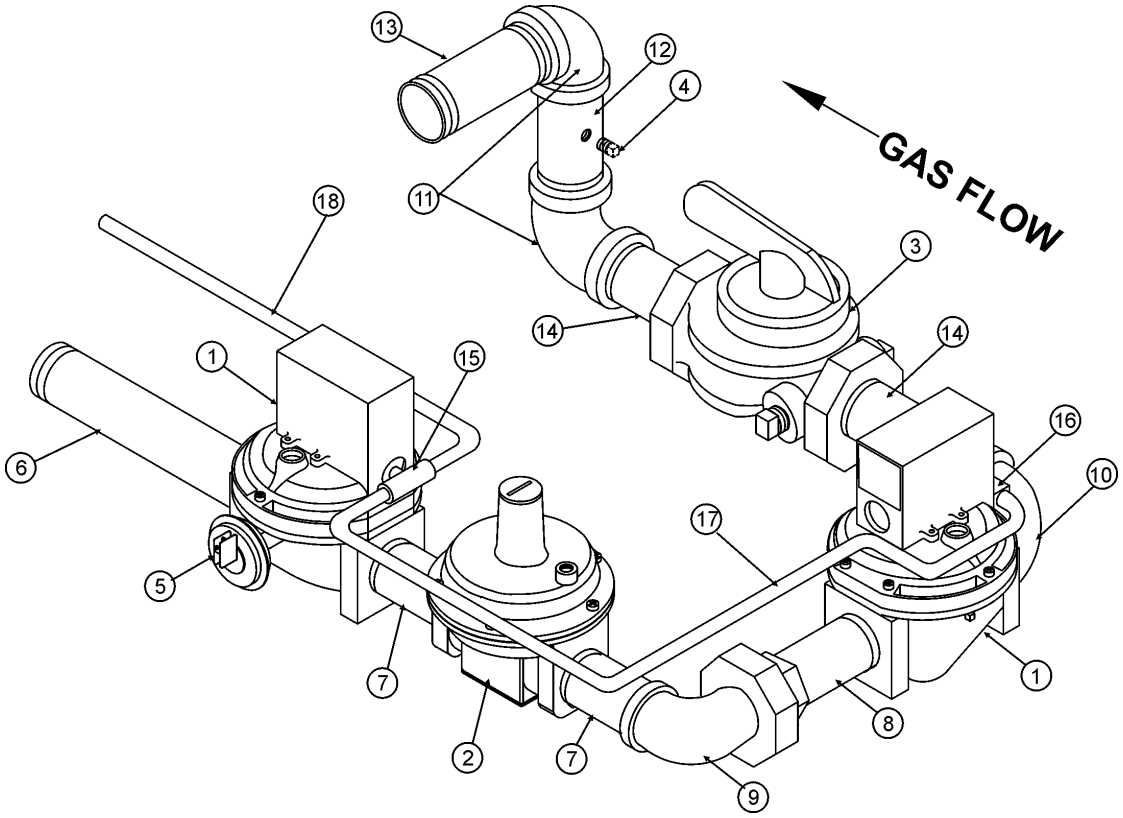
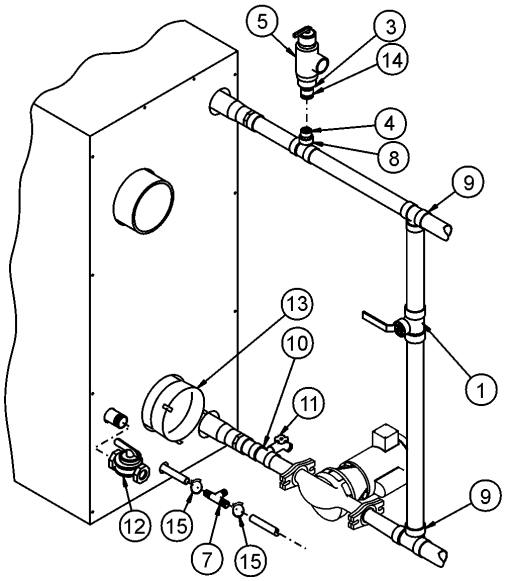
LB/LW 1000 PROPANE GAS TRAIN ASSEMBLY

Item	Description	Part No.	Item	Description	Part No.
1	Valve, Main Gas, LP 981 Series	77780	10	Elbow, 90 Street 1-1/4”	94516
2	Regulator, LP 981 Series	192460	11	Elbow, 90 1-1/4”	192216
3	Valve, Firing	3423-3	12	Nipple, 1-1/4” w/Tapping	86505-32
4	Pipe Plug	3348	13	Nipple, 1-1/4”	86505-6
5	Switch, Low Gas Pressure	191149-3	14	Nipple, 1-1/4”	86505-4
6	Nipple, 1-1/4”	86505-13	15	Tee, 1/8” NPT Branch	192465
7	Nipple, 1-1/4”	86505-2	16	Connector, Angle 1/8”	1578
8	Nipple, 1-1/4”	86505-17	17	Bleeder, Tube	210016
9	Elbow, Union 1-1/4”	86506	18	Bleeder, Tube	192461



On LB models the circulating pump must be between the boiler inlet and the bypass (see figure below). LW models have pump mounted inside the jacket.



LB/LW 1000 BY-PASS PARTS LIST

Item	Description	Part No.
1	Ball Valve	191935
2	Tank/Pump Kit (LW Models Only - Not Shown)	210625
3	Hex Reducing Bushing (LB Only)	91940-8
4	Flush Bushing (LB Only)	192163-2
5	Relief Valve (LW Model)	98883-3
	Relief Valve (LB Model)	210451-2
6	Strap, Cable (not shown)	99592-2
7	Tee, Condensate	192040-1
8	Tee (For use w/relief valve):	
	LW Model	78685-4
	LB Model	191584
9	Tee 2"x2"x2"	191584
10	Tee 2"x2"x3/4"	78685-4
11	Valve, Drain	26273
12	Valve, Manual Shutoff	3423-3
13	Vent Patch Assembly	192161
14	Nipple (For use w/Relief Valve)	
	LW Model	20373-12
	LB Model	92706-4
15	Clamp, Hose	191794-1

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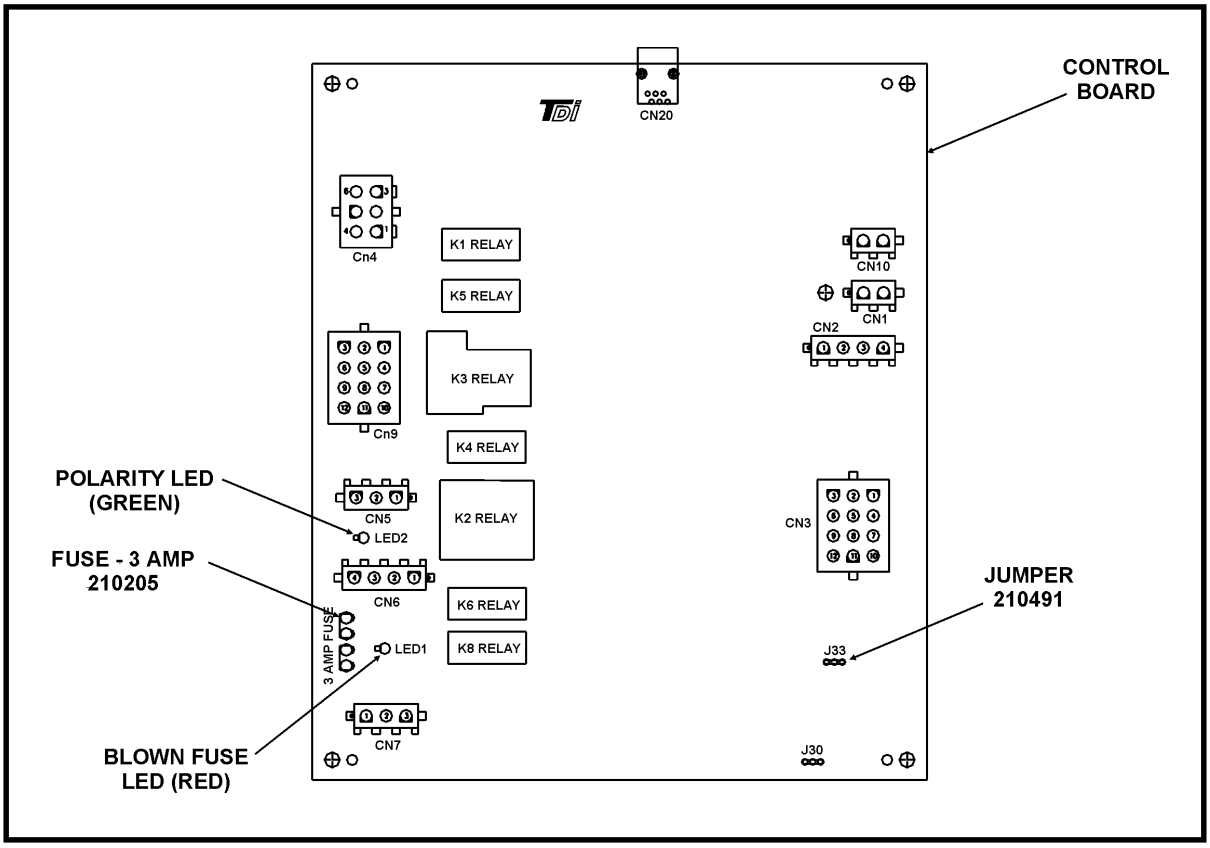
LB/LW 1000 CONTROL BOARD WHC 1502

Part Number 210128



LB/LW 1000 WIRING CHART

COLOR	GAUGE	PART NUMBER ***
White	14	41974
Black	14	99650
Green	14	41972
White	16	86580
Black	16	86578
Green	16	69058
White	18	170595
Black	18	170596
Green	18	170606
Blue	18	191719
Red	18	170603
Yellow	18	170604
Brown	18	170890
White/Red	18	191700
White/Yellow	18	191702
White/Black	18	191699
Black/White	18	191694
Yellow/Blue	18	191708
Red/Green	18	191717

***** Use dash number to indicate length of wire.**
Example: 20 inch long red wire would be expressed as 170603-20.

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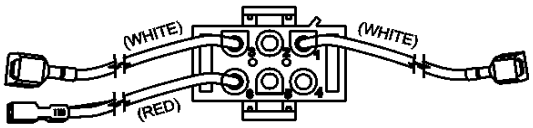
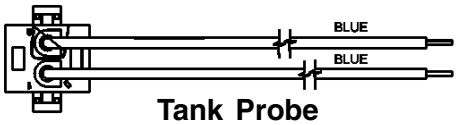
LB/LW 1000 TERMINALS

78468	99593-6	78469	191673	42573	210091	210152	99599-2

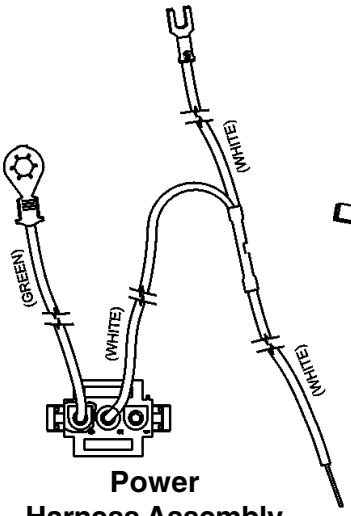
LB/LW 1000 WIRING AND HARNESS ASSEMBLY



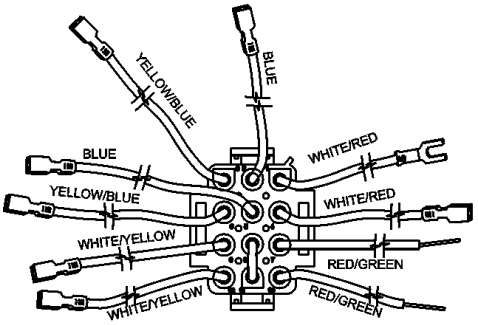
Ignition Harness Assembly 210575



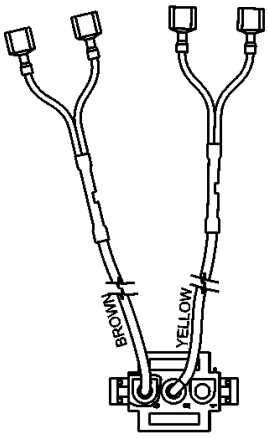
Tank Probe Harness Assembly 210604



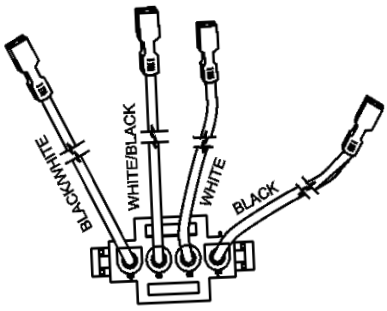
Power Harness Assembly 210579-1



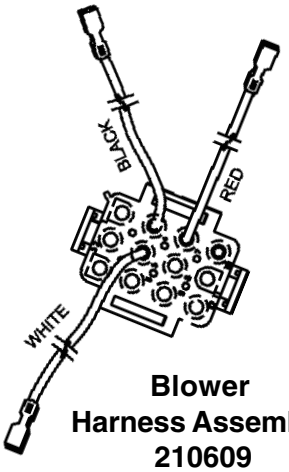
Pressure Flow Switch Harness Assembly 210576



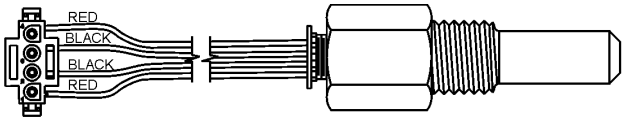
Gas Valve Harness Assembly 210574 (-1 Propane)



Transformer Harness Assembly 210578

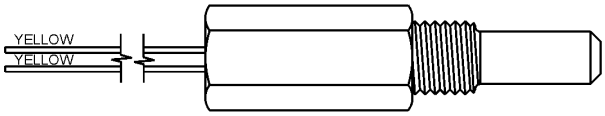


Blower Harness Assembly 210609



Outlet Temperature Control/ ECO Assembly 210572

Inlet Temperature Control Assembly 210571



Tank Probe (LW Models) 210211-1

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